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EXAMINER

NGUYEN, TOAN D

ART UNIT

PAPER NUMBER

2416

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/685,947	<b>Applicant(s)</b> LAVIAN ET AL.	
	<b>Examiner</b> TOAN D. NGUYEN	<b>Art Unit</b> 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 2-25 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 2, 5, 10-11, 14, 20-21 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al. (US 5,504,744) in view of Aimoto et al. (US 6,144,636).

For claim 2, Adams et al. disclose further comprising receiving program code in the packet forwarding device after installation of the packet forwarding device in a

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packet communications network and wherein said monitoring, determining and automatically changing is implemented by the executing program code (col. 5, lines 27-35).

For claim 5, Adams et al. disclose broadband switching network, comprising:  
monitoring bandwidth consumption (figure 3, reference 31, col. 6, line 32) by one or more types of packet traffic (figure 4, reference 41-44, col. 10, lines 29-35) received in the packet forwarding device comprising determining a measure of bandwidth consumption in the packet forwarding device due to traffic associated with a physical port (figure 3, references 22 or 25) on the forwarding device (col. 10, lines 29-62);  
determining whether the bandwidth consumption by the one or more type of packet traffic exceeds a threshold (col. 5, lines 34-35).

However, Adams et al. do not expressly disclose automatically changing assignment of at least one type of packet traffic of the one or more types of packet traffic from a queue having a first priority to a queue having a second priority if the bandwidth consumption computed based on traffic statistics substantially in real-time exceeds the threshold. In an analogous art, Aimoto et al. disclose automatically changing assignment of at least one type of packet traffic of the one or more types of packet traffic from a queue (CBR buffer means) having a first priority (CBR buffer is set higher than that of the VBR buffer means) to a queue (VBR buffer means) having a second priority if the bandwidth consumption computed based on traffic statistics substantially in real-time exceeds the threshold (col. 2, lines 65-67).

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One skilled in the art would have recognized the automatically changing assignment of at least one type of packet traffic of the one or more types of packet traffic from a queue having a first priority to a queue having a second priority if the bandwidth consumption computed based on traffic statistics substantially in real-time exceeds the threshold, and would have applied Aimoto et al.'s traffic classes in Adams et al.'s threshold. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aimoto et al.'s packet switch and congestion notification method in Adams et al.'s broadband switching network with the motivation being transferred the cell to the VBR buffer (col. 2, lines 65-67).

For claim 10, Adams et al. disclose broadband switching network, comprising:  
a plurality of input/output (I/O) ports to transmit and receive packets of information (figure 2, references 22 and 23, col. 4, lines 60-66);

first and second queues to buffer the packets prior to transmission via one or more of the I/O ports (figure 4, references 41-44, col. 4, lines 29-41); and

queue assignment logic to assign the packets to be buffered in either the first queue or the second queue according to a packet type associated with each packet, each of the packets being associated with at least one of a plurality of packet types

one or more agents (figure 3, reference 31) to monitor bandwidth consumption by packets associated with a first packet type of the plurality of packet types (col. 10, lines 29-62).

However, Adams et al. do not expressly disclose automatically change assignment of packets associated with the first packet type from the first queue to the

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second queue if bandwidth consumption of packets associated with the first packet type and computed based on an evaluation of traffic statistics substantially in real-time exceeds a threshold; packets buffered in the first queue having higher transmission priority than packets buffered in the second queue; and queue assignment logic to assign the packets to be buffered in either the first queue or the second queue according to a packet type associated with each packet, each of the packets being associated with at least one of a plurality of packet types. In an analogous art, Aimoto et al. disclose automatically change assignment of packets associated with the first packet type from the first queue (CBR buffer is set higher priority than that of the VBR buffer means) to the second queue (VBR buffer means) if bandwidth consumption of packets associated with the first packet type and computed based on an evaluation of traffic statistics substantially in real-time exceeds a threshold (col. 2, lines 65-67); packets buffered in the first queue having higher transmission priority than packets buffered in the second queue (col. 2, lines 60-64); and queue assignment logic to assign the packets to be buffered in either the first queue or the second queue according to a packet type associated with each packet, each of the packets being associated with at least one of a plurality of packet types (col. 2, lines 47-64).

One skilled in the art would have recognized the automatically change assignment of packets associated with the first packet type from the first queue to the second queue if bandwidth consumption of packets associated with the first packet type and computed based on an evaluation of traffic statistics substantially in real-time exceeds a threshold, and would have applied Aimoto et al.'s traffic classes in Adams et

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al.'s threshold. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aimoto et al.'s packet switch and congestion notification method in Adams et al.'s broadband switching network with the motivation being transferred the cell to the VBR buffer (col. 2, lines 65-67).

For claim 11, Adams et al. disclose further comprising:

a processing unit coupled to the plurality of I/O ports (figure 3, references 22 and 25), the processing unit including a memory and a processor (figure 3, references 34 and 32, col. 6, lines 31-35); and

a data communications interface to receive program code in the memory of processing unit after installation of the packet forwarding apparatus in a packet communications network and wherein the one or more agents are implemented by execution of the program code in the processor of the processing unit (col. 5, lines 27-30).

For claim 14, Adams et al. disclose wherein the first packet type comprises packets associated with a particular one of the I/O ports (col. 4, lines 60-66);

For claim 20, Adams et al. disclose broadband switching network, comprising:

a plurality of input/output (I/O) ports to transmit and receive packets of information from one or more other devices in the communications network (figure 2, references 22 and 23, col. 4, lines 60-66);

first and second queues to buffer the packets prior to transmission via one or more of the I/O ports, packets buffered in the first queue having higher transmission priority than packets buffered in the second queue (figure 4, references 41-44, col. 4,

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lines 29-35);

queue assignment logic to assign the packets to be buffered in either the first queue or the second queue according to a packet type associated with each packet, each of the packets being associated with at least one era plurality of packet types (col. 10, lines 40-62); and

one or more agents (figure 2, reference 31) to monitor bandwidth consumption by packets associated with a first packet type of the plurality of packet types (col. 10, lines 29-62).

However, Adams et al. do not expressly disclose automatically change assignment of packets associated with the first packet type from the first queue to the second queue if bandwidth consumption of packets associated with the first packet type and computed based on an evaluation of traffic statistics substantially in real-time exceeds a threshold. In an analogous art, Aimoto et al. disclose automatically change assignment of packets associated with the first packet type from the first queue (CBR buffer means) to the second queue (VBR buffer means) if bandwidth consumption of packets associated with the first packet type and computed based on an evaluation of traffic statistics substantially in real-time exceeds a threshold (col. 2, lines 65-67).

One skilled in the art would have recognized the automatically change assignment of packets associated with the first packet type from the first queue to the second queue if bandwidth consumption of packets associated with the first packet type and computed based on an evaluation of traffic statistics substantially in real-time exceeds a threshold, and would have applied Aimoto et al.'s traffic classes in Adams et



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al.'s threshold. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aimoto et al.'s packet switch and congestion notification method in Adams et al.'s broadband switching network with the motivation being transferred the cell to the VBR buffer (col. 2, lines 65-67).

For claim 21, Adams et al. disclose further comprising:

a processing unit coupled to the plurality of I/O ports (figure 3, references 22 and 25), the processing unit including a memory and a processor (figure 3, references 34 and 32, col. 6, lines 31-35); and

a data communications interface to receive program code in the memory of processing unit after installation of the packet forwarding apparatus in a packet communications network and wherein the one or more agents are implemented by execution of the program code in the processor of the processing unit (col. 5, lines 27-30).

For claim 24, Adams et al. disclose wherein the packet forwarding apparatus is a switch (figure 2, reference 21, col. 4, line 60).

For claim 25, Adams et al. disclose wherein the packet forwarding device is a switch (figure 2, reference 21, col. 4, line 60).

5. Claims 3-4, 12-13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al. (US 5,504,744) in view of Aimoto et al. (US 6,144,636) further in view of Goth et al. (US 6,373,841).

For claims 3-4, 12-13 and 22, Adams et al. in view of Aimoto et al. do not expressly disclose wherein receiving the program code comprises receiving a sequence

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of virtual machine instructions and wherein executing the program code comprises executing the sequence of virtual machine instructions using a virtual machine included in the packet forwarding device. In an analogous art, Goth et al. disclose wherein receiving the program code comprises receiving a sequence of virtual machine instructions and wherein executing the program code comprises executing the sequence of virtual machine instructions using a virtual machine included in the packet forwarding device (col. 8, lines 3-4).

Goth et al. disclose wherein receiving the sequence of virtual machine instructions comprises receiving a sequence of Java byte codes and wherein executing the sequence of virtual machine instructions using a virtual machine comprises executing the sequence of Java byte codes in a Java virtual machine included in the packet forwarding device (col. 8, lines 2-3 as set forth in claim 4); wherein the packet forwarding apparatus further comprises program code that, when executed by the processing unit, implements a virtual machine, and wherein the program code received via the data communications interface comprises a sequence of instructions that is executed by the virtual machine to implement one or more agents (col. 8, line 4 as set forth in claim 12); wherein the program code received via the data communications interface includes a sequence of Java byte codes and wherein the virtual machine is a Java virtual machine (col. 8, line 4 as set forth in claim 13); wherein the packet forwarding device further includes program code that, when executed by the processing unit, implements a virtual machine, and wherein the program code received via the data

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communications interface includes a sequence of instructions that is executed by the virtual machine it implement one or more agents (col. 8, line 4 as set forth in claim 22).

One skilled in the art would have recognized the wherein receiving the program code comprises receiving a sequence of virtual machine instructions and wherein executing the program code comprises executing the sequence of virtual machine instructions using a virtual machine included in the packet forwarding device, and would have applied Goth et al.'s Java virtual machine in Adams et al.'s programmed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Goth et al.'s integrated LAN controlled and web server chip in Adams et al.'s broadband switching network with the motivation being to provide the Java Virtual Machine (col. 8, line 4).

6. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al. (US 5,504,744) in view of Aimoto et al. (US 6,144,636) further in view of Pitcher et al. (US 5,790,554).

For claims 6-7, Adams et al. disclose broadband switching network, comprising:

monitoring bandwidth consumption (figure 3, reference 31, col. 6, line 32) by one or more types of packet traffic received in the packet forwarding device (figure 4, reference 41-44, col. 10, lines 29-35) comprising determining a measure of bandwidth consumption in the packet forwarding device due to traffic (col. 10, lines 29-62); and

determining whether the bandwidth consumption by the one or more types of packet traffic exceeds a threshold (col. 5, lines 34-35).

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However, Adams et al. do not expressly disclose automatically changing assignment of at least one type of packet traffic of the one or more types of packet traffic from a queue having a first priority to a queue having a second priority if the bandwidth consumption computed based on traffic statistics substantially in real-time exceeds the threshold. In an analogous art, Aimoto et al. disclose automatically changing assignment of at least one type of packet traffic of the one or more types of packet traffic from a queue having a first priority to a queue having a second priority if the bandwidth consumption computed based on traffic statistics substantially in real-time exceeds the threshold (col. 2, lines 65-67).

One skilled in the art would have recognized the automatically changing assignment of at least one type of packet traffic of the one or more types of packet traffic from a queue having a first priority to a queue having a second priority if the bandwidth consumption computed based on traffic statistics substantially in real-time exceeds the threshold, and would have applied Aimoto et al.'s traffic classes in Adams et al.'s threshold. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aimoto et al.'s packet switch and congestion notification method in Adams et al.'s broadband switching network with the motivation being transferred the cell to the VBR buffer (col. 2, lines 65-67).

Furthermore, Adams et al. in view of Aimoto et al. do not expressly disclose traffic associated with a particular network address; and an evaluation of traffic statistics substantially in real-time. In an analogous art, Pitcher et al. disclose traffic associated with a particular network address (col. 6, lines 35-37).

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Pitcher et al. disclose wherein determining a measure of bandwidth consumption in the packet forwarding device due to traffic associated with the particular network address comprises determining a measure of bandwidth consumption due to traffic associated with a particular media access control (MAC) address (col. 6, lines 35-37 as set forth in claim 7).

One skilled in the art would have recognized the traffic associated with a particular network address, and would have applied Pitcher et al.'s devices forward packets in Adams et al.'s sub-switching network. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Pitcher et al.'s method and apparatus for processing data packets in a network in ATM networks in Adams et al.'s broadband switching network with the motivation being maintained a data structure or the like associating MAC addresses of devices in the network with the port out which the device may be reached over the network (col. 6, lines 37-40).

For claims 8-9 and 15-17, Adams et al. disclose broadband switching network, comprising:

monitoring bandwidth consumption (figure 3, reference 31, col. 6, line 32) by one or more types of packet traffic received in the packet forwarding device (figure 4, reference 41-44, col. 10, lines 29-35) comprising determining a measure of bandwidth consumption in the packet forwarding device due to traffic (col. 10, lines 29-62); and

determining whether the bandwidth consumption by the one or more types of packet traffic exceeding a threshold (col. 5, lines 34-35).

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However, Adams et al. do not expressly disclose automatically changing assignment of at least one type of packet traffic of the one or more types of packet traffic from a queue having a first priority to a queue having a second priority if the bandwidth consumption computed based on traffic statistics substantially in real-time exceeds the threshold. In an analogous art, Aimoto et al. disclose automatically changing assignment of at least one type of packet traffic of the one or more types of packet traffic from a queue having a first priority to a queue having a second priority if the bandwidth consumption computed based on traffic statistics substantially in real-time exceeds the threshold (col. 2, lines 65-67).

One skilled in the art would have recognized the automatically changing assignment of at least one type of packet traffic of the one or more types of packet traffic from a queue having a first priority to a queue having a second priority if the bandwidth consumption computed based on traffic statistics substantially in real-time exceeds the threshold, and would have applied Aimoto et al.'s traffic classes in Adams et al.'s threshold. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aimoto et al.'s packet switch and congestion notification method in Adams et al.'s broadband switching network with the motivation being transferred the cell to the VBR buffer (col. 2, lines 65-67).

Furthermore, Adams et al. in view of Aimoto et al. do not expressly disclose traffic associated with a particular communications protocol. In an analogous art, Pitcher et al. disclose traffic associated with a particular communications protocol (col. 6, lines 1-4).

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Pitcher et al. disclose wherein determining a measure of bandwidth consumption in the packet forwarding device due to traffic associated with the particular communications protocol comprises determining a measure of bandwidth consumption in the packet forwarding device due to traffic associated with at least one of the following protocols: file transfer protocol (FTP), hyper-text transfer protocol (HTTP), transmission control protocol/Internet protocol (TCP/[P](col. 6, lines 1-4 as set forth in claim 9); wherein the first packet type comprises packets comprises packet associated with a particular network address (col. 6, lines 35-37 as set forth in claim 15); wherein the particular network address is a particular media access control (MAC) address (col. 6, lines 35-37 as set forth in claim 16); wherein the first packet type comprises packets comprises packets associated with a particular communications protocol (col. 6, lines 1-4 as set forth in claim 17).

One skilled in the art would have recognized the traffic associated with a particular communications protocol, and would have applied Pitcher et al.'s TCP/IP protocol in Adams et al.'s sub-switching network. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Pitcher et al.'s method and apparatus for processing data packets in a network in ATM networks in Adams et al.'s broadband switching network with the motivation being to provide the means by which a network management system operating on computer system 500 exchange information with other devices couples to the same computer network such as LAN switch 100 (col. 6, lines 4-7).

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7. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al. (US 5,504,744) in view of Aimoto et al. (US 6,144,636) and Pitcher et al. (US 5,790,554) further in view of Goth et al. (US 6,373,841).

For claim 18 and 19, Adams et al. in view of Aimoto et al. and Pitcher et al. do not expressly disclose wherein the particular communications protocol is a hyper-text transfer, protocol (HTTP). In an analogous art, Goth et al. disclose wherein the particular communications protocol is a hyper-text transfer, protocol (HTTP)(col. 3, line 23); wherein the particular communications protocol is a file transfer protocol (FTP)(col. 3, line 24 as set forth in claim 19).

One skilled in the art would have recognized the wherein the particular communications protocol is a hyper-text transfer, protocol (HTTP), and would have applied Goth et al.'s Java virtual machine in Adams et al.'s programmed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Goth et al.'s integrated LAN controlled and web server chip in Adams et al.'s broadband switching network with the motivation being to provide the Java Virtual Machine (col. 8, line 4).

8. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kant (US 5,563,874) in view of Aimoto et al. (US 6,144,636).

For claim 23, Kant discloses error monitoring algorithm for broadband signaling, comprising:

monitoring an error rate associated with one or more types of packet traffic received in the packet forwarding device (col. 2, lines 10-13);



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determining whether the error rate associated with the one or more types of packet traffic exceeds a threshold (col. 2, lines 14-15);

automatically changing assignment of at least one type of packet traffic of the one or more types of packet traffic from a link to a another link if the error rate computed based on an evaluation of error information substantially exceeds the threshold (col. 2, lines 13-15)

However, Kant does not expressly disclose changing from a queue having a first priority to a queue having a second priority in real-time exceeds the threshold. In an analogous art, Aimoto et al. disclose changing from a queue having a first priority to a queue having a second priority in real-time exceeds the threshold (col. 2, lines 65-67).

One skilled in the art would have recognized the changing from a queue having a first priority to a queue having a second priority in real-time exceeds the threshold, and would have applied Aimoto et al.'s traffic classes in Kant's error monitoring algorithm. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aimoto et al.'s packet switch and congestion notification method in Kant's error monitoring algorithm for broadband signaling with the motivation being transferred the cell to the VBR buffer (col. 2, lines 65-67).

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOAN D. NGUYEN whose telephone number is (571)272-3153. The examiner can normally be reached on M-F (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. D. N./  
Examiner, Art Unit 2416

/William Trost/  
Supervisory Patent Examiner, Art Unit 2416